

What is claimed is:

1. A water-soluble casting mold comprising a refractory granular material for casting sand and a water-soluble binder containing at least one inorganic sulfate compound selected from magnesium sulfate, aluminum sulfate, sodium sulfate, nickel sulfate, manganese sulfate, wherein the inorganic sulfate compound has crystal water in dry state.

2. A water-soluble casting mold comprising 100 parts by weight of a refractory granular material for casting sand and a binder containing 0.5 to 10.0 parts by weight of magnesium sulfate heptahydrate, wherein the magnesium sulfate has crystal water in dry state.

3. The water-soluble casting mold according to claim 2, wherein the magnesium sulfate has crystal water equivalent to mono- to penta-hydrate in dry state.

4. The water-soluble casting mold according to claim 1, wherein the binder contains the inorganic sulfate compound and not more than 75% by weight of at least one of sodium dihydrogen phosphate and potassium dihydrogen phosphate.

5. The water-soluble casting mold according to claim 1, wherein the binder contains the inorganic sulfate compound and not more than 50% by weight of at least one of tricalcium phosphate, aluminum phosphate, trisodium phosphate, sodium diphosphate, and disodium hydrogen

phosphate dodecahydrate.

6. The water-soluble casting mold according to claim 1, wherein the binder is a mixture of the inorganic sulfate compound and not more than 75% by weight of magnesium chloride.

7. A method for manufacturing a water-soluble casting mold including a first step of obtaining casing sand by mixing a refractory granular material for casting sand with a water-soluble binder containing at least one inorganic sulfate compound selected from magnesium sulfate, aluminum sulfate, sodium sulfate, nickel sulfate, and manganese sulfate and water; a second step of forming the resulting casting sand; and a third step of obtaining a mold by drying the casting sand in such a manner that the inorganic sulfate compound in the casting sand is kept retaining at least a portion of the crystal water.

8. A method for manufacturing a water-soluble casting mold including a first step of obtaining casing sand by mixing 100 parts by weight of a refractory granular material for casting sand with a binder containing 0.5 to 10.0 parts by weight on the basis of magnesium sulfate heptahydrate and water in an amount sufficient to completely dissolve the magnesium sulfate in the binder; a second step of forming the resulting casting sand; and a third step of obtaining a mold by drying the casting sand in such a manner that the magnesium sulfate in the casting sand is kept retaining at least a portion of the crystal water.

9. The method for manufacturing a water-soluble casting mold according to claim 7, wherein the binder contains the inorganic sulfate compound and not more than 75% by weight of at least one of sodium dihydrogen phosphate and potassium dihydrogen phosphate.

10. The method for manufacturing a water-soluble casting mold according to claim 7, the binder contains the inorganic sulfate compound and not more than 50% by weight of at least one of tricalcium phosphate, aluminum phosphate, trisodium phosphate, sodium diphosphate, and disodium hydrogen phosphate dodecahydrate.

11. The method for manufacturing a water-soluble casting mold according to claim 7, wherein the binder is a mixture of the inorganic sulfate compound and not more than 75% by weight of magnesium chloride.

12. The method for manufacturing a water-soluble casting mold according to claim 7, wherein the third step is carried out by drying the casting sand with microwave or hot air heating.

13. The method for manufacturing a water-soluble casting mold according to claim 7, wherein forming in the second step is carried out by filling a cavity of a ventilative ceramic mold with the casting sand.

14. The method for manufacturing a water-soluble casting mold

according to claim 8, wherein the third step is carried out by drying the casting sand with microwave or hot air heating.

15. The method for manufacturing a water-soluble casting mold according to claim 8, wherein forming in the second step is carried out by filling a cavity of a ventilative ceramic mold with the casting sand.